Note: Applicant uses:

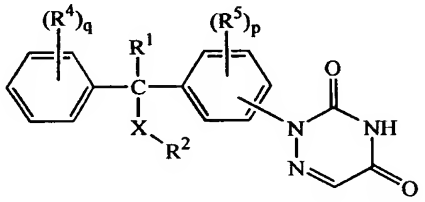
- ~~*Cross-out text*~~ *to indicate deletions*
- *Underline text to indicate additions*

Claims:

1. through 12. Canceled

13. (New) A method of marking or identifying a receptor comprising the steps of:

a) radiolabelling a compound of formula (I)



(I)

a *N*-oxide, a pharmaceutically acceptable addition salt or a stereochemically isomeric form thereof, wherein :

p represents an integer being 0, 1, or 2;

q represents an integer being 0, 1, or 2;

X represents O, S, NR^3 or a direct bond;

R^1 represents hydrogen, hydroxy, halo, amino, C_{1-6}alkyl, C_{1-6}alkyloxy or mono- or di(C_{1-4}alkyl)aminoC_{1-4}alkylamino; in particular, hydrogen, methyl and hydroxy;

R^2 represents oxadiazolyl, thiazolyl, pyrimidinyl or pyridinyl; wherein said heterocycles each independently may optionally be substituted with one, or where possible, two or three substituents each independently selected from Het^2, R^{11} and C_{1-4}alkyl optionally substituted with Het^2 or R^{11};

each R^4 independently represents C_{1-6}alkyl, halo, polyhaloC_{1-6}alkyl or C_{1-6}alkyloxy;

each R^5 independently represents C_{1-6}alkyl, halo or C_{1-6}alkyloxy;

each R^6 independently represents C_{1-6}alkylsulfonyl, aminosulfonyl or phenylC_{1-4}alkylsulfonyl;

each R^7 and each R^8 are independently selected from hydrogen, C_{1-4}alkyl, hydroxyC_{1-4}alkyl, dihydroxyC_{1-4}alkyl, aryl, arylC_{1-4}alkyl, C_{1-4}alkyloxyC_{1-4}alkyl, mono- or di(C_{1-4}alkyl)aminoC_{1-4}alkyl, arylaminocarbonyl, arylaminothiocarbonyl, C_{3-7}cycloalkyl, pyridinylC_{1-4}alkyl, Het^3 and R^6;

R^9 and R^{10} are each independently selected from hydrogen, C_{1-4}alkyl, C_{1-4}alkylcarbonyloxyC_{1-4}alkylcarbonyl, hydroxyC_{1-4}alkylcarbonyl, C_{1-4}alkyloxycarbonylcarbonyl, Het^3aminothiocarbonyl and R^6;

each R^{11} independently being selected from hydroxy, mercapto, cyano, nitro, halo, trihalomethyl, C_{1-4}alkyloxy, carboxyl, C_{1-4}alkyloxycarbonyl, trihaloC_{1-4}alkylsulfonyloxy, R^6, NR^7R^8, $C(=O)NR^7R^8$, aryl, aryloxy, arylcarbonyl, C_{3-7}cycloalkyl, C_{3-7}cycloalkyloxy, phthalimide-2-yl, Het^3 and $C(=O)Het^3$;

R^{12} and R^{13} are each independently selected from hydrogen and C_{1-4}alkyl;

aryl represents phenyl optionally substituted with one, two or three substituents each independently selected from nitro, azido, halo, hydroxy, C_{1-4}alkyl, C_{1-4}alkyloxy, polyhaloC_{1-4}alkyl, NR^9R^{10}, R^6, phenyl, Het^3 and C_{1-4}alkyl substituted with NR^9R^{10};

Het^1 represents a heterocycle selected from a heterocycle selected from imidazolyl, triazolyl, furanyl, oxazolyl, thiazolyl, thiazolinyl, thiadiazolyl, oxadiazolyl, pyridinyl, pyrimidinyl, pyrazinyl, piperidinyl, piperazinyl, triazinyl, benzothiazolyl, benzoxazolyl, purinyl, 1*H*-pyrazolo-[3,4-d]pyrimidinyl, benzimidazolyl, thiazolopyridinyl, oxazolopyridinyl, imidazo-[2,1-b]thiazolyl; wherein said heterocycles each independently may optionally be substituted with one, or where possible, two or three substituents each independently selected from Het^2, R^{11} and C_{1-4}alkyl optionally substituted with Het^2 or R^{11};

Het^2 represents furanyl, thienyl or pyridinyl; wherein said monocyclic heterocycles each independently may optionally be substituted with C_{1-4}alkyl;

Het^3 represents pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl; wherein said monocyclic heterocycles each independently may optionally be substituted with, where possible, one, two or three substituents each independently selected from C_{1-4}alkyl, C_{1-4}alkyloxy, C_{1-4}alkyloxycarbonyl, C_{1-4}alkylcarbonyl, phenylC_{1-4}alkyl, piperidinyl, $NR^{12}R^{13}$ and C_{1-4}alkyl substituted with $NR^{12}R^{13}$;

b) administering said radiolabelled compound to biological material; and

c) detecting the emissions from the radiolabelled compound.

14. (New) The method of claim 13 wherein the 6-azauracil moiety of said compound according to claim 13 is in the para position relative to the central carbon atom.

15. (New) The method of claim 13 wherein the 6-azauracil moiety of said compound according to claim 13 is in the para position relative to the central carbon atom; q is 1 or 2 and one R^4 substituent is in the 4 position; and p is 1 or 2 and the one or two R^5 substituents are in the ortho position relative to the central carbon atom.

16. (New) The method of claim 13 wherein one or more atoms in the compound are replaced by radioactive isotopes.

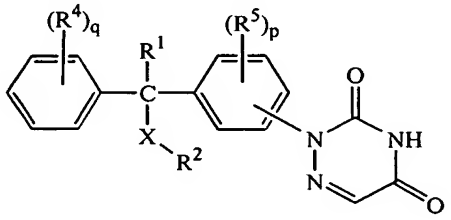
17. (New) The method of claim 13 wherein the compound comprises at least one halo which is a radioactive isotope of iodine, bromine, or fluorine.

18. (New) The method of claim 13 wherein the compound comprises at least one ^{11}C-atom or tritium atom.

19. (New) The method of claim 13 wherein R^3 and/or R^4 are a radioactive halogen atom.

20. (New) A method of imaging an organ ,comprising the steps of:

a) radiolabelling a compound of formula (I)



(I)

a *N*-oxide, a pharmaceutically acceptable addition salt or a stereochemically isomeric form thereof, wherein :

p represents an integer being 0, 1, or 2;

q represents an integer being 0, 1, or 2;

X represents O, S, NR^3 or a direct bond;

R^1 represents hydrogen, hydroxy, halo, amino, C_{1-6}alkyl, C_{1-6}alkyloxy or mono- or di(C_{1-4}alkyl)aminoC_{1-4}alkylamino; in particular, hydrogen, methyl and hydroxy;

R^2 represents oxadiazolyl, thiazolyl, pyrimidinyl or pyridinyl; wherein said heterocycles each independently may optionally be substituted with one, or where possible, two or three substituents each independently selected from Het^2, R^{11} and C_{1-4}alkyl optionally substituted with Het^2 or R^{11};

each R^4 independently represents C_{1-6}alkyl, halo, polyhaloC_{1-6}alkyl or C_{1-6}alkyloxy;

each R^5 independently represents C_{1-6}alkyl, halo or C_{1-6}alkyloxy;

each R^6 independently represents C_{1-6}alkylsulfonyl, aminosulfonyl or phenylC_{1-4}alkylsulfonyl;

each R^7 and each R^8 are independently selected from hydrogen, C_{1-4}alkyl, hydroxyC_{1-4}alkyl, dihydroxyC_{1-4}alkyl, aryl, arylC_{1-4}alkyl, C_{1-4}alkyloxyC_{1-4}alkyl, mono- or di(C_{1-4}alkyl)aminoC_{1-4}alkyl, arylaminocarbonyl, arylaminothiocarbonyl, C_{3-7}cycloalkyl, pyridinylC_{1-4}alkyl, Het^3 and R^6;

R^9 and R^{10} are each independently selected from hydrogen, C_{1-4}alkyl, C_{1-4}alkylcarbonyloxyC_{1-4}alkylcarbonyl, hydroxyC_{1-4}alkylcarbonyl, C_{1-4}alkyloxycarbonylcarbonyl, Het^3aminothiocarbonyl and R^6;

each R^{11} independently being selected from hydroxy, mercapto, cyano, nitro, halo, trihalomethyl, C_{1-4}alkyloxy, carboxyl, C_{1-4}alkyloxycarbonyl, trihaloC_{1-4}alkylsulfonyloxy, R^6, NR^7R^8, $C(=O)NR^7R^8$, aryl, aryloxy, arylcarbonyl, C_{3-7}cycloalkyl, C_{3-7}cycloalkyloxy, phthalimide-2-yl, Het^3 and $C(=O)Het^3$;

R^{12} and R^{13} are each independently selected from hydrogen and C_{1-4}alkyl;

aryl represents phenyl optionally substituted with one, two or three substituents each independently selected from nitro, azido, halo, hydroxy, C_{1-4}alkyl, C_{1-4}alkyloxy, polyhaloC_{1-4}alkyl, NR^9R^{10}, R^6, phenyl, Het^3 and C_{1-4}alkyl substituted with NR^9R^{10};

Het^1 represents a heterocycle selected from a heterocycle selected from imidazolyl, triazolyl, furanyl, oxazolyl, thiazolyl, thiazolinyl, thiadiazolyl, oxadiazolyl, pyridinyl,

pyrimidinyl, pyrazinyl, piperidinyl, piperazinyl, triazinyl, benzothiazolyl, benzoxazolyl, purinyl, 1*H*-pyrazolo-[3,4-d]pyrimidinyl, benzimidazolyl, thiazolopyridinyl, oxazolopyridinyl, imidazo-[2,1-b]thiazolyl; wherein said heterocycles each independently may optionally be substituted with one, or where possible, two or three substituents each independently selected from Het^2, R^{11} and C_{1-4}alkyl optionally substituted with Het^2 or R^{11};

Het^2 represents furanyl, thienyl or pyridinyl; wherein said monocyclic heterocycles each independently may optionally be substituted with C_{1-4}alkyl;

Het^3 represents pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl; wherein said monocyclic heterocycles each independently may optionally be substituted with, where possible, one, two or three substituents each independently selected from C_{1-4}alkyl, C_{1-4}alkyloxy, C_{1-4}alkyloxycarbonyl, C_{1-4}alkylcarbonyl, phenylC_{1-4}alkyl, piperidinyl, $NR^{12}R^{13}$ and C_{1-4}alkyl substituted with $NR^{12}R^{13}$;

b) administering a sufficient amount of said radiolabelled compound in an appropriate composition to an animal; and

c) detecting the location of said radiolabelled compound.

21. (New) The method of claim 20 wherein the 6-azauracil moiety of said compound according to claim 20 is in the para position relative to the central carbon atom.

22. (New) The method of claim 20 wherein the 6-azauracil moiety of said compound according to claim 20 is in the para position relative to the central carbon atom; q is 1 or 2 and one R^4 substituent is in the 4 position; and p is 1 or 2 and the one or two R^5 substituents are in the ortho position relative to the central carbon atom.

23. (New) The method of claim 20 wherein one or more atoms in the compound are replaced by radioactive isotopes.

24. (New) The method of claim 20 wherein the compound comprises at least one halo which is a radioactive isotope of iodine, bromine, or fluorine.

25. (New) The method of claim 20 wherein the compound comprises at least one ^{11}C-atom or tritium atom.

26. (New) The method of claim 20 wherein R^3 and/or R^4 are a radioactive halogen atom.

27. (New) The method of claim 20 wherein the location of said radiolabelled compounds is detected using imaging techniques.

28. (New) The method of claim 27 wherein said imaging techniques comprises positron emission tomography.

29. (New) The method of claim 27 wherein said imaging techniques comprises single photon emission computerized tomography.

30. (New) The method of claim 13 wherein said biological material comprises an animal.

31. (New) The method of claim 13, wherein said biological material comprises a human being.

32. (New) The method of claim 13, wherein said biological material comprises a tissue sample.

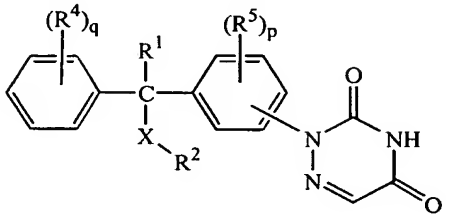
33. (New) The method of claim 13 wherein the emissions of said radiolabelled compounds is detected using imaging techniques.

34. (New) The method of claim 33 wherein said imaging techniques comprises positron emission tomography.

35. (New) The method of claim 33 wherein said imaging techniques comprises single photon emission computerized tomography.

36. (New) A method of evaluating receptor binding ability of a test compound, comprising the steps of:

a) radiolabelling a compound of formula (I)



(I)

a *N*-oxide, a pharmaceutically acceptable addition salt or a stereochemically isomeric form thereof, wherein :

p represents an integer being 0, 1, or 2;

q represents an integer being 0, 1, or 2;

X represents O, S, NR^3 or a direct bond;

R^1 represents hydrogen, hydroxy, halo, amino, C_{1-6}alkyl, C_{1-6}alkyloxy or mono- or di(C_{1-4}alkyl)aminoC_{1-4}alkylamino; in particular, hydrogen, methyl and hydroxy;

R^2 represents oxadiazolyl, thiazolyl, pyrimidinyl or pyridinyl; wherein said heterocycles each independently may optionally be substituted with one, or where possible, two or three substituents each independently selected from Het^2, R^{11} and C_{1-4}alkyl optionally substituted with Het^2 or R^{11};

each R^4 independently represents C_{1-6}alkyl, halo, polyhaloC_{1-6}alkyl or C_{1-6}alkyloxy;

each R^5 independently represents C_{1-6}alkyl, halo or C_{1-6}alkyloxy;

each R^6 independently represents C_{1-6}alkylsulfonyl, aminosulfonyl or phenylC_{1-4}alkylsulfonyl;

each R^7 and each R^8 are independently selected from hydrogen, C_{1-4}alkyl, hydroxyC_{1-4}alkyl, dihydroxyC_{1-4}alkyl, aryl, arylC_{1-4}alkyl, C_{1-4}alkyloxyC_{1-4}alkyl, mono- or di(C_{1-4}alkyl)aminoC_{1-4}alkyl, arylaminocarbonyl, arylaminothiocarbonyl, C_{3-7}cycloalkyl, pyridinylC_{1-4}alkyl, Het^3 and R^6;

R^9 and R^{10} are each independently selected from hydrogen, C_{1-4}alkyl, C_{1-4}alkylcarbonyloxyC_{1-4}alkylcarbonyl, hydroxyC_{1-4}alkylcarbonyl, C_{1-4}alkyloxycarbonylcarbonyl, Het^3aminothiocarbonyl and R^6;

each R^{11} independently being selected from hydroxy, mercapto, cyano, nitro, halo, trihalomethyl, C_{1-4}alkyloxy, carboxyl, C_{1-4}alkyloxycarbonyl, trihaloC_{1-4}alkylsulfonyloxy, R^6, NR^7R^8, $C(=O)NR^7R^8$, aryl, aryloxy, arylcarbonyl, C_{3-7}cycloalkyl, C_{3-7}cycloalkyloxy, phthalimide-2-yl, Het^3 and $C(=O)Het^3$;

R^{12} and R^{13} are each independently selected from hydrogen and C_{1-4}alkyl;

aryl represents phenyl optionally substituted with one, two or three substituents each independently selected from nitro, azido, halo, hydroxy, C_{1-4}alkyl, C_{1-4}alkyloxy, polyhaloC_{1-4}alkyl, NR^9R^{10}, R^6, phenyl, Het^3 and C_{1-4}alkyl substituted with NR^9R^{10};

Het^1 represents a heterocycle selected from a heterocycle selected from imidazolyl, triazolyl, furanyl, oxazolyl, thiazolyl, thiazolinyl, thiadiazolyl, oxadiazolyl, pyridinyl, pyrimidinyl, pyrazinyl, piperidinyl, piperazinyl, triazinyl, benzothiazolyl, benzoxazolyl, purinyl, 1*H*-pyrazolo-[3,4-d]pyrimidinyl, benzimidazolyl, thiazolopyridinyl, oxazolopyridinyl, imidazo-[2,1-b]thiazolyl; wherein said heterocycles each independently may optionally be substituted with one, or where possible, two or three substituents each independently selected from Het^2, R^{11} and C_{1-4}alkyl optionally substituted with Het^2 or R^{11};

Het^2 represents furanyl, thienyl or pyridinyl; wherein said monocyclic heterocycles each independently may optionally be substituted with C_{1-4}alkyl;

Het^3 represents pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl; wherein said monocyclic heterocycles each independently may optionally be substituted with, where possible, one, two or three substituents each independently selected from C_{1-4}alkyl, C_{1-4}alkyloxy, C_{1-4}alkyloxycarbonyl, C_{1-4}alkylcarbonyl, phenylC_{1-4}alkyl, piperidinyl, $NR^{12}R^{13}$ and C_{1-4}alkyl substituted with $NR^{12}R^{13}$;

b) administering said radiolabelled compound to biological material; and

c) detecting displacement of said compound of formula (I) by said test compound.

37. (New) The method of claim 36 wherein the 6-azauracil moiety of said compound according to claim 36 is in the para position relative to the central carbon atom.

38. (New) The method of claim 36 wherein the 6-azauracil moiety of said compound according to claim 20 is in the para position relative to the central carbon atom; q is 1 or 2 and one R^4 substituent is in the 4 position; and p is 1 or 2 and the one or two R^5 substituents are in the ortho position relative to the central carbon atom.

39. (New) The method of claim 36 wherein one or more atoms in the compound are replaced by radioactive isotopes.

40. (New) The method of claim 36 wherein the compound comprises at least one halo which is a radioactive isotope of iodine, bromine, or fluorine.

41. (New) The method of claim 36 wherein the compound comprises at least one ^{11}C-atom or tritium atom.

42. (New) The method of claim 36, wherein R^3 and/or R^4 are a radioactive halogen atom.